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ABSTRACT

When formulating the platforms and plans for the future of vocational education, educational planners must consider the implications of the significant qualitative, social, and economic changes that are currently taking place in the worlds of business, industry, and labor as well as in the world of education at-large. An examination of current trends in the areas of high technology, labor force demographics, and organizational culture indicates that business and individual clients of vocational education will increasingly demand not only technical skills but also the work adjustment and interpersonal skills necessary to function in this new environment. Various factors, including the recent information explosion, demographic changes, and the rise of computer and related product technology have increased the need for life-long learning, for the acquisition of study and learning skills, and for improving students' occupational scientific literacy. Because of these societal trends, vocational education must institute approaches for integrating the delivery of occupation training and the knowledge and skills that make up what some have called the new basics--communication, information processing, science and mathematics, and computer literacy. In addition, vocational education faces significant challenges in the areas of diversity, issue management, and revitalization. (MN)

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A DISCUSSION PLATFORM
FOR THE FUTURING
OF VOCATIONAL EDUCATION

Prepared by
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For
National and State Advisory Councils
on Vocational Education

July 1983

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PREFACE

Throughout this century vocational education has played an important role in this country's efforts in education and training. Because of this importance, no aspect of education has been debated more thoroughly or evaluated more extensively than vocational education. And, as a result, changes have occurred—a picture of vocational education today has little resemblance to the one in the family album.

But today, changes are taking place that even the most imaginative could not have projected. As James Jordan (1980), Vice President-Employee Relations, ICI Americas Inc., so astutely observed—"Looking ahead to the future is not just a matter of looking down the road, but around several corners."

Because the events and trends driving this scenario of change are not only powerful but oft times contradictory, the need for thoughful reexamination in all fields has reached a new level of importance. The purpose of this paper is to provide an additional platform to aid that reexamination in the field of vocational education. The achievement of that purpose is attempted by analyzing the impact of societal trends on the environments which will most likely influence the future of vocational education, and by delineating a set of challenges which can serve as a discussion platform for vocational education futuring.

In the introduction of the paper, a foundation is established. The relevancy of the need to improve the responsivesness of vocational education is discussed. In addition, an overview of the nature of the resulting challenge is suggested.

In the second section, trend analyses are conducted on the environments that are likely to have the most significant shaping influence on vocational education.

The final section suggests a menu, in the form of a set of challenges, that can serve as an aid for discussing the future responsiveness of vocational education.

INTRODUCTION

Only rarely in any social system does a period of time occur in which a need and an opportunity for significant change coexist; a period when significant change is not only a possibility, but a necessity. As a result of the convergence of a set of powerful social, economic, and political trends, the immediate future appears to be such a unique period.

The notion that we are living in a time where truly qualitative changes are occurring is crucially important to all who are concerned with planning the future. And, it is why this theme is emphasized over and over again in the futures literature.

Alvin Toffler (1980) in the first page of the first chapter of his book, the Third Wave, observes—"A new civilization is emerging in our lives." In the introduction to Megatrends, John Naisbitt (1982) notes this theme in stating the purpose of his book, "This book is about a new American society that is not yet fully evolved. Nevertheless the restructuring of America is already changing our inner and outer lives." Christopher Dede (1980), a leading educational futurist, echoes this same message, "A great many reinforcing events which combine to affect basic parameters of the society can overwhelm inertia and lead to a basic redefinition of the social system itself. The 1980's seems to be such a period in history."

If we are, indeed, living through such a unique period, what are the broad based implications for those who are concerned about improving our institutions and systems. For the purpose of providing an initial basis for dialogue, some likely implications are suggested for the field of vocational education.

Implication #1. Viable priorities for vocational education will not be derived by looking inward. Improved curricula, computerized guidance systems, and new teacher education programs are not the critical priorities to which vocational education must be responsive--they are instead possible solutions which vocational education can offer. The difference is far from moot. Instead, the priorities for vocational education must be drawn from the nation's emerging social and economic needs. In so doing, vocational educators must avoid any narrow conception of their mission. As Dan Dunham (1980), former head of vocational education for HEW, urged--vocational education will achieve its "long-sought greatness" when it becomes a key variable in the larger social and economic systems that make this country work.

Implication #2. The "more button" won't work. In a time of qualitative change, doing more of what is being done or limiting improvement to what is currently being attempted will not suffice. It will be necessary to discuss a set of goals which as yet are not within the mainstream responsibility of vocational education.

Implication #3. In planning for the future, time will not be an ally. A new set of societal needs are emerging. If vocational education does not address them, other systems will. The analogs from industry are clear--the phenomenal success stories of Apple, Intel, and Tandem Computers Inc. and the terrible plight of the American automobile industry.

The overall nature of the challenge facing the futuring of vocational education can perhaps be characterized as--substantial, substantive, and potentially rewarding.

AN ANALYSIS OF TRENDS

As an introduction to this section, a few general remarks concerning trend analysis seem appropriate.

Remark #1. If useful information is to be derived for generating the challenges brought about by societal changes, specific predictions should probably be avoided. As John Naisbitt (1980) notes in Megatrends, the focus should be given to broad patterns--attempts to develop detailed predictions are "the stuff of futuristic guessing games."

Remark #2. Trends have differing K-Indices. That is, we have more knowledge about some trends than others. For example, we have a pretty good idea concerning demographics. On the other hand, although a great deal has been written about "high technology," even the definitions in that area are still vague. This is one of the main reasons why later on in the paper some trends are discussed differently than others.

Remark #3. Although trends are often discussed, as they will be in this paper, as if they were independent of each other, obviously this is not the case. The reality is quite the opposite; they are highly interactive.

As an additional part of the introduction, it is important to note that numerous approaches are available for examining societal trends, all of which would provide information useful for vocational education futuring. The specific approach selected, however, does have a substantial influence on the type of information derived. In this case, the following considerations were used to select the most beneficial approach.

Consideration #1. The approach should employ a framework that is familiar to the audience who will be using the information.

Consideration #2. If a piece of work is to add to the dialogue, it must attempt to do more than summarize the existing futures literature—an analysis is needed; implications must be delineated which aid in the derivation of the challenges for the field of inquiry.

Consideration #3. The approach should be sensitive to the notion that any field must look to the comprehensive needs of the larger societal context within which the system exists and which the system serves.

Given these considerations, a better understanding of the futuring of two particular environments, the worlds of business, industry, and labor and education-at-large, appears appropriate, if not essential, for deriving the challenges facing vocational education.

Business, Industry, and Labor

Today, "business as usual" is not an expression one hears very frequently. And rightly so, dramatic changes are occurring. For example, although the total output of the U.S. is still larger than any other country in the world, the growth of the U.S. productivity in recent years has been poorer than any other major western industrial nation (Le Boeuf, 1982). Our share of the world's manufacturing exports is now 17 percent—twenty years ago that figure was 25 percent. And, as Bluestone and Harrison (1982) report: during the 1970's, in twelve states, plant and business closings shut down more jobs than new starts produced. Moreover, the businesses that were opened were often in different locations or in different industries. And, frequently the new jobs required different skills. So even the growth of new industries did not represent a relief for many depressed areas or an alternative for the many who were classified as "displaced".

The introduction to this section was not selected to paint a picture of doom. For, on the other hand, the more positive side of the coin could have been described. However, these figures, along with others, do tend to indicate the changes which are occurring are not short-term or cyclical. They are instead driven by significant long-term trends which are producing permanent shifts in the business, industry, and labor status of the United States.

In the following paragraphs, some of the trends which are likely to have the most influence on the future nature of the world of work are discussed. The specific trends described were selected because of their impact on issues of consequence for the futuring of vocational education.

High technology. In examining the trends likely to influence the nature of work, no other is more talked about, more interesting, or less clear than the so-called high technology revolution. To establish a better base for understanding the impact of high technology, it is useful to distinguish between the following: (1) the core industries which produce the basic high technology components (Producers), (2) the industries that build or manufacture their products with these components (Manufacturers), and (3) the organizations which use the produced microcomputers, robots, and telecommunication equipment (Consumer Organizations).

Given that framework, some important considerations related to the development of high-technology are as follows:

- It is important to note that many Consumer Organizations are not "high technology" industries or businesses. Nevertheless, the widespread use of the new generation of high technology products in these enterprises will have a significant impact. Although many would not attach the "High Technology" label to the automobile industry, the introduction of robotics has and will continue to influence both the number of available jobs and the nature of the work performed by those who remain.
- Although a great many cities and states will be attempting to attract high technology Producers and Manufacturers, only a few locations will truly benefit. Therefore, the labor market impact of these types of organizations will vary tremendously from state to state, or even within a state. In relation to education and training, it is important to note that the current centers of these industries, Silicon Valley, Boston's Route 128, Research Triangle Park, etc., are all located near a cluster of educational institutions which have superior technical and scientific capabilities.

- If just Producers and Manufacturers of high technology are considered, the real future impact in terms of the number of new jobs is relatively small. In spite of their spectacular rate of growth, these industries will create only a modest number of jobs in the next ten years. This is due to the current small size of the high-tech sector and the fact that the productivity per worker is extremely high (Business Week, 1983). Clearly, the major education and training problem in these industries is not related to training vast numbers of workers but, instead, how to provide the appropriate skills to a relatively small number of critical workers.
- Occupations of varying levels of technical skill will exist in both the Producer and Manufacturer sectors. The growth of high technology in these sectors will create a need for a continuum of skilled workers ranging from routine level assemblers to highly skilled technicians (Ruff and Lewis, 1981). The point is not all workers in high technology companies will need to possess a high level of technical skill.
- In regard to Consumer Organizations, the introduction of high technology equipment will affect the very nature of how work is carried out. The important consideration in these cases is not whether the introduction of high technology will bring about the need for workers with a higher or lower level of skills. Instead, the important consideration would appear to be that good technical skills will still be required. And, the need for analytic and communicative skills is likely to be increased.

In summary, some likely implications for vocational education:

- The need for workers in high-tech industries (Producers and Manufacturers) will not be equally distributed across the United States.
- When shortages do develop for highly skilled technicians, those shortages are likely to be critical in nature. Their criticality will be based on considerations such as: (1) the long training and experience period required, (2) requirements for aptitudes not widely distributed in the population, and (3) the basic developmental nature of the work.

- Consumer Organizations will demand workers with both technical and analytic/communication skills.

Labor Force Demographics. Two major factors will influence the labor force between now and the year 2000 that will have significant impact for vocational education: the changing composition of the population and the shifting labor participation rates.

- As the baby-boom generation (those born between 1945 and 1963) age, their numbers and behavior will have a substantial impact on the composition of the labor force. The number of people between the ages of 35 to 54 will increase sharply between now and 1995. The 35- to 44-year old age group will experience a big increase in the 1980's, while the big jump for the 45- to 54-year old age group will occur after 1990. The 16- to 24-year old age group will experience a sharp decline in the next 15 years. By 1990 there will be about a half million fewer labor force entrants for the 16- to 24-year old age group annually entering the labor market compared to 1980 (Lewis and Russell, 1979). A second factor influencing composition will be the percentage of minority labor force entrants. Whereas today minority groups account for approximately 22 percent of the new entrants, by the end of this decade that figure will be close to 30 percent (Lewis and Russell, 1979).
- In regard to shifting participation rates, two considerations appear important. First, the percentage of women in the work force. The labor force participant rate for women in 1965 was approximately 40 percent (Harris, 1980), that figure is projected to increase to almost 58 percent by 1995 (Lewis and Russell, 1979). As Janet Norwood (1977) from the U.S. Bureau of Labor Statistics notes—"In the United States today, the female commitment to the world of work is the strongest it has been for many decades." The participation rate of older citizens will be the second factor of importance. Due to the fact that people are living longer and fixed incomes are being eroded, an increasing number of older people will be remaining in or reentering the labor force (Davenport, 1981) and (Rosow, 1981).

The implications for vocational education of these changes will be significant. Three considerations are as follows:

- o Since the rise in labor participation rates will not compensate for the impact of the population decline among selected population groups, the rate of increase in the total size of the labor force will decrease during the 1980's. Due to this situation, many companies are likely to offer opportunities for the retraining and upgrading of their existing labor force. Vocational education must determine what priority it wishes to attach to this need - if the need is not met, companies will likely initiate their own programs and the impact for voactional education will extend well beyond the 1980's.
- o Since the labor force will be composed of more women and minority group members, they will become an increasingly important clientele for vocational education.
- o The expectations and background skill levels of many who will be seeking training or retraining will be markedly different than vocational education's traditional clientele.

Organizational Culture. Alvin Toffler (1980) characterizes the industrial bureaucracy of the so-called Second Wave as a: "Hierarchial, permanent, top-down, mechanistic organization, well designed for making repetitive products or repetitive decisions in a comparatively stable industrial environment." He also goes on to note that tomorrow will bring wholly new kinds of organizations.

If we turn to the research work of Peters and Waterman (1982) of the McKinsey Group, we are provided with a present day snapshot of what these new kinds of organizations may look like. In their book, In Search of Excellence, Peters and Waterman describe the characteristics of the excellent and innovative companies that currently exist in the U.S. The research suggests that excellent companies have among other attributes the following: (1) a closeness to their customers, (2) opportunities for autonomy and entrepreneurship, and (3) a respect for the needs and values of the

individual worker. Clearly, the fundamental management philosophies of organizations in this country are changing. These changes are being brought about by the necessity of meeting increased foreign competition, shifting economics, and changing worker values.

In this paper it seems particularly important to stress that shifts are occurring in the value systems of the American work force. Ian Wilson (1980) provides some interesting insight into the nature of those changes. Some of the shifts in emphasis reported by Wilson are as follows:

- o "From considerations of quantity toward considerations of quality."
- o "From competition toward cooperation."
- o "From the primacy of technical efficiency, toward considerations of social justice and equity."
- o "From the concept of work as hard, unavoidable and a duty — toward work as purposeful and self-fulfilling along with a recognition of leisure as a valid activity in its own right."

The importance of these shifts in values is recognized in many corners. James Jordan (1980) comments that the issues surrounding individualism will be the single biggest concern in the future of collective bargaining. David Gottlieb (1977), in his paper for the 1976 Bicentennial Conference on Vocational Education, echoes many of these same themes.

Other changes are also occurring that will affect the nature of our business organizations. One such example that has particular significance for vocational education is the increasing importance of entrepreneurship. In regard to this example, it is important that the entrepreneurial story is represented not only by a phenomenal increase in the number of small businesses but also by an increase in individual profit-centers inside large organizations.

In summary, the most significant implication for the futuring of vocational education will be: the business and individual clients of vocational education will increasingly demand not only technical skills but also the work adjustment/interpersonal skills necessary to function in this new environment.

Education-At-Large

In the last two decades, American education systems have been impacted by a variety of forces ranging from declining enrollment to school busing. And, it is unlikely that education will be any less impervious to societal changes during the next two decades.

The degree to which our educational system has the capacity to be responsive to the changing needs of society is a topic of much debate. In a country that emphasizes local control of education, no single clear conclusion can be reached from that debate. What is clear, however, is that our educational systems cannot remain unchanged during the next two decades--societal changes will not permit a status quo.

In this section some of the trends and issues that will likely impact our educational systems are discussed. The trends selected were those most likely to have significant implications for vocational education.

Information Explosion. A United States Senator (1982) recently commented in an article in the Futurist--"The United States is presently in the midst of the Information Revolution, and it is every bit as significant as the Industrial Revolution." John Naisbitt (1982) brings to our attention that the new information society isn't new--its formation was well underway in the late 1950's. As Naisbitt goes on to point out--the problem is "that our thinking, our attitudes, and consequently our decision making have not caught up with the reality of things." This significant trend will likely have two major impacts on the education system: (1) there will be an increased need to learn how to learn, and (2) the need for life-long learning will be markedly expanded--some thoughts on each of these topics:

- Clearly, the devlopment of an information-rich society creates the need for people to continuously learn new facts, new understandings, and new skills. In such a society, the mastery of knowledge for its own sake must be valued less than the acquisition of concepts, tools, retrieval, and sorting skills which equip the individual to learn additional knowledge. Although clearly fundamental communication and mathematical skills will be essential, it is important to stress that this challenge cannot be addressed by just returning to the three R's.

As suggested by Irving Buchen (1980), Dean of the School of Humanities at California State College - what is required is an emphasis on process disciplines that focus on the skills required to learn how to learn and to develop the ability to determine what to learn. This notion recognizes whereas once the major task of the schools was to transmit information, the job tomorrow will be more to give the student the skills to handle the information coming from many sources - the underlying design criterion for such a curriculum: transferability.

- The shift to an information society will mean that education will begin earlier and that it will recur periodically throughout one's lifetime. The implications of truly implementing life-long education will involve fundamental questions of where education will be delivered, how it will be delivered, and by whom it will be delivered. Are these questions really likely to be important for vocational education? — Answer, a definite "Even More So".

In regard to the specific implications for vocational education, it would appear that the emphasis on process skills cannot be limited to general education. Today, for vocational education that means vocational programming must directly address the basic reading and math deficiencies of their entering students. Tomorrow, it calls for participating with the rest of education in teaching students the skills to collect, analyze, and integrate new information to a much higher level than is presently being achieved.

Demographics. School enrollment between now and the turn of the century will vary substantially. Two major considerations will drive the changes: (1) changes in the absolute number of the various age groups and (2) the percentage of each age group enrolled in schools. Some specifics are as follows:

- The number of students enrolled in high school, grades 9 to 12, is projected to drop from 15 million to 12.5 million in 1990—a 16 percent decrease (Lewis and Russel, 1980). It is perhaps equally important that the so-called "echo-boom" (children born to the baby-boom generation) will somewhat push those enrollments up again in the mid 1990's. In addition, the number of minority students in this age group in high school will rise since the percentage of minorities at this age level will increase.

- At the same time, there will be a sharp increase in the 35- to 44-year old age group and in the 65+ cohort (Lewis and Russell, 1980). It also appears likely that an increase will occur in the percentage of these age groups desiring to secure additional education.

Some of the implications of the demographics of enrollment for vocational education are as follows:

- Vocational education at this secondary level will either have to expand the type of services offered or attact a new clientele in order to maintain present enrollment figures.
- Post-secondary schools will have a higher percentage of middle age (35 to 44) and older clients seeking occupational education.
- Because there will be a substantial reduction in the percentage of the population in the 20 to 24-year old age group (in absolute terms there will be approximately 16% fewer in this cohort in 1995 as compared to 1977), competition for these individuals among the military, busines/industry, and colleges will increase. Post-secondary institutions will have to be both active in recruiting and sensitive to the needs of the other institutional players with whom they are competing.

Computer and Related Product Technology. There are only a few innovations that truly alter the world in which we live. One can now debate the merits of the Automobile Age, but few would question that its appearance has affected every aspect of our lives. The advent of the computer and related technology will ultimately have the same order of impact.

In considering the influence of the computer on education, several points are worthy of note:

- The early introduction of computers in education produced a series of failure stories. However, the changes in computer technology in the last several years have negated the reasons behind those failures.

- It is estimated that as early as 1985, 75 percent of all jobs will involve computers in some way and those who don't know how to use them will form a new class of disadvantaged (Naisbitt, 1982). Clearly, every student exiting school will need to know the versatility and limitations of computer technology. This requirement will exist both for occupational survival and for functioning in society-at-large.
- In addition to affecting what is taught, the reduced cost and increased capability of computer technology will markedly affect how we teach. If we invest the resources, this technology will provide the first real opportunity to truly individualize instruction.
- Old topics concerning the utilization of computers in education such as whether they will lead to the depersonalization of learning, must be resolved so that more pressing issues can be put on the agenda.

In regard specifically to vocational education, some implications of advanced computer technology are as follows:

- In the near future, increasing computer capacity in the area of modeling and simulations will provide a partial answer to the rising equipment cost problems.
- The widespread use of computer technology will increase the importance of improving the occupational scientific literacy of vocational students. Vocational education will need to assume a direct responsibility for achieving this literacy.
- A substantial effort will need to be directed toward the up-dating of vocational staff in computer skills. Moreover, dramatic changes will be needed in preservice programs to reflect the increasing importance of computer technology.
- Computer/communication technology will permit an unprecedented type of citizen participation in vocational education. With proper thought that participation will lead to improved understanding and support for vocational education - mishandled, it will be simply declared another expensive educational folly.

CHALLENGES AND ISSUES

Throughout this paper, the challenges facing the futuring of vocational education have been outlined. In the introduction section basic considerations were discussed. In the second section some implications of the impact of significant societal trends were proposed. In this section the impact on vocational education of a unique period in our history is explored in an integrated fashion. Any single attempt to accomplish this task can only produce meager results--the task calls for extended, interactive dialogue involving a diversity of perspectives. Clearly, the real importance of this section in particular, and the paper in general, lies in its purpose--the establishment of a platform for discussion.

What follows are some proposed challenges and issues for discussion which are grouped into four broad areas: literacy, diversity, issue management, and revitalization.

Literacy. Vocational education must develop and institute the programs by which it can continue to fullfill its primary role of providing occupational training, and in addition, play a more direct and active role in addressing what some have called the new basics. Clearly, no component of our educational system can stand apart from the challenge posed by the emergence of an information-rich, high technology society in which 13 percent of the 17-year olds and as high as 40 percent of its minority young have not even achieved functional literacy. Vocational education must institute approaches for integrating the delivery of occupational training and the knowledge and skills that make up the new basics--communication/information processing, science and mathematics, and computer literacy. In an environment where time and funds are constraints, this challenge is truly difficult. But in the end, the issue is really not one of lack of resources, but one of deciding the priorities towards which the existing resources will be committed. The trade-offs will be difficult.

Diversity. A second fundamental challenge facing the futuring of vocational education is the design of the policies and delivery systems that are capable of addressing tomorrow's diversity. The diversity of vocational education clients in terms of age, composition, entry-level skills and aspirations will increase. The demands from business, industry, and labor will call for quick and varied responses. If the needs are more diverse, then a wider variety of approaches relative to the nature, scope, and timing of programs must be made available.

Vocational education must not only possess the capacity to address an increasing variety of needs but also be able to adjust rapidly to a constant change in the mix of needs. In planning a more responsive system, vocational education must develop the capacity to hit a variety of moving targets. It is important to recognize this need for diversity in formulating the national and state policy frameworks for vocational education. It seems likely that a responsive system for vocational education in New York State will not resemble the system that will be responsive to Arizona's need. And, what's good for Phoenix, may not work in Ajo, Arizona.

Issue Management. We are living in a rapidly changing, pluralistic society. If one pauses for a moment to reflect on the real difficulty of improving the responsiveness of any system in such a context, the challenge becomes almost immobilizing. If changing and often conflicting needs are to be addressed, powerful mechanisms must be in place for reaching a working consensus on issues. Determining whether or not the mechanisms are in place; and if they're not, how they can be established, is a challenge of a fundamental variety.

The mechanisms required must be capable of managing issues such as the following:

- o Equity and Economic Development. In the last several years vocational education has made significant progress in increasing its responsiveness to special needs groups such as the disadvantaged and handicapped and in the area of women's equity. Today, there is also an increasing demand for vocational education to play a larger role in the economic development of this country. How do we make those two goals truly compatible? What are the consequences if we trade one off against the other?
- o Secondary and Post-secondary Roles. The issue of the respective roles of secondary and post-secondary has been on the vocational agenda for a very long time. The word articulation has been used in so many ways; it has lost all meaning. Have compatible roles for secondary and post-secondary been established or has an uneasy, fuzzy compromise been accomplished?
- o Cooperation and Coordination. A higher order of cooperation and coordination will be a cornerstone for any substantive efforts in the futuring of vocational education. Will that higher order be better achieved by viewing vocational

education as a single entity or as a collection of closely related occupational areas? As a field which desires to delimit the involvement of other professional disciplines or as one which will actively recruit that involvement? As an educational effort that involves other groups in the planning of vocational education or as one which has partnerships with others.

The answers are not clear, but what does appear with some clarity is that attempts to establish a new responsiveness call for viable mechanisms for reaching consensus. And, in an increasingly decentralized, participatory society the assumption that existing mechanisms will be effective is at risk.

Revitalization. There is a very significant difference between redecorating, remodeling, and renovating a house. Given the changing society, a need for a revitalization of vocational education (and it might be added, education in general) is apparent. So the question is not whether a revitalization is needed, but rather where are minor improvements versus substantive changes versus reforms required? It is suggested that a need for a revitalization of vocational education should not be viewed as a need for wholesale renovation. On the other hand, simply doing more of what is being done or the instituting of minor improvements will probably not be sufficient. Some issues for discussion:

- How will the need be met to up-date training in occupations where equipment technology is rapidly changing ?
- What type of instructional staff is needed in areas involving complex high technology, particularly those areas where the teaching of basic theory is necessary? Will incentives be needed to attract and maintain the desired staff?
- What types of organization, and what is the composition of the organizations needed to provide leadership for vocational education during the next two decades? What organizations should be eliminated and are new ones needed?
- What programs should be eliminated because they are directed towards obsolete or low paying, deadend jobs? What new types of occupational or non-occupational programs should be added?

- What changes need to be made to guarantee the next generation of vocational education scholars and other leaders?
- How will the research and development needed to address and support national and state priorities be carried out?
- How will new clientele groups such as senior citizens and the gifted be attracted to vocational education?
- What should be the roles of Advisory Councils? Who should participate in determining the roles and purposes of state and local Advisory Councils?
- How will a revitalization be financed in a period of uncertain educational budgets?

CONCLUDING REMARKS

The purpose of this paper does not lend itself to a classic summary. However, a few concluding remarks seem appropriate for those who may use it as a platform for discussing the futuring of vocational education.

- The future is not predetermined. By encouraging an examination of the challenges and issues facing vocational education, its future can be shaped and directed, rather than awaited and endured. It is useful to think in terms of creating a preferred future, as opposed to choosing between an array of presumed predestined futures. The task is to understand better the context within which vocational education will exist--to reinforce and build upon those trends which will facilitate that attainment of the selected preferred future(s) and minimize the impact of those trends which are driving towards the creation of something less.
- Futuring demands not only determiniation of where one wants to go but also an understanding of one's starting point. The just-published report by the President's National Commission On Excellence In Education (A Nation At Risk: The Imperative for Educational Reform, 1984) notes our educational system is not in very good shape. That condition must be recognized—not apologized for, not ignored: but just recognized, if a more responsive system is to be developed.

- To create a preferred future it will be necessary to spend as much time on the formulation of the problems, issues, and goals, as on the perfection of the solutions. As Albert Einstein once noted: 90 percent of creativity is in the reformulation of the problem, not in the derivation of the solution.

The challenges facing vocational education are difficult but not intractable. We are setting out on a difficult voyage, in a somewhat ill-fitted ship, and there are numerous storm clouds on the horizon; but it is important to remember that a very talented crew is aboard.

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BIBLIOGRAPHY

"A Nation At Risk: The Imperatives for Educational Reform." Prepared by the National Commission On Excellence In Education, 1984.

"America Rushes to High Tech For Growth." Business Week, March 28, 1983.

Bluestone, Barry and Bennett Harrison. The Deindustrialization of America. New York, NY: Basic Book, 1982.

Buchen, Irving H. "Curriculum 2000: Future Basics." Needs of Elementary and Secondary Education in the 1980's--A Compendium of Policy Papers. Washington, DC, U.S. Government Printing Office, 1980.

Davenport, Lawrence F. "The Changing Clientele for Vocational Education." The Future of Vocational Education. Edited by Gordon L Swanson, Arlington, VA: American Vocational Association Inc., 1981.

Dede, Christopher J. "The Next Ten Years in Education." Education: A Time for Decision. Edited by Kathleen M. Reed and Arthur M. Harkins. Washington, DC: World Future Society, 1980.

Dunham, Daniel B. "Vocational Education: Policies, Issues, and Politics in the 1980's." Occasional Paper No. 65. Columbus, OH: National Center for Research in Vocational Education, 1980.

Harris, Louis. "Our Changing Structure of Values." Working in the Twenty-First Century. Edited by C. Stewart Sheppard and Donald C. Carroll, New York, NY: Wiley Publications, 1980.

Hart, Gary. "Investing in People for the Information Age." The Futurist. Bethesda, MD: World Future Society, February 1983.

Jordan, James H. "Trends in the Work Force: Individualism, Inflation, and Productivity." Working in the Twenty-First Century. Edited by C. Stewart Sheppard and Donald C. Carroll, New York, NY: Wiley Publications, 1980.

LeBoeuf, Michael. The Productivity Challenge. New York, NY: McGraw-Hill, 1982.

Lewis, Morgan V. and Jill F. Russell. Trends, Events, and Issues Likely to Influence Vocational Education in the 1980's. Columbus, OH: The National Center for Research in Vocational Education, The Ohio State University, April 1980.

Naisbitt, John. Mega-trends--Ten New Directions Transforming Our Lives. New York, NY: Warner Books, 1982.

Norwood, Janet L. "The Demographic and Employment Perspective for the Future of Vocational Education." The Future of Vocational Education, Papers from the Bicentennial Conference on Vocational Education. Edited by Albert J. Pautler, Jr., the Center for Vocational Education, 1977.

Peters, Thomas J. and Robert H. Waterman. In Search of Excellence--Lessons from America's Best-Run Companies. New York, NY: Harper and Row, 1982.

Rostow, Jerome M. "Personnel Policies for the 1980's." Working in the Twenty-First Century. Edited by C. Stewart Sheppard and Donald C. Carroll, New York, NY: Wiley Publications, 1980.

Ruff, Richard D. and Morgan V. Lewis. National Priorities for Vocational Education. Columbus, OH: The National Center for Research in Vocational Education, The Ohio State University, September 1981.

Toffler, Alvin. The Third Wave. New York, NY: Bantam Books, Inc., 1980.

Wilson, Ian H. "The Mosaic Society." Working in the Twenty-First Century. Edited by C. Stewart Sheppard and Donald Carroll, New York, NY: Wiley Publications, 1980.

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